

A Citizen's Auide to Understanding Stormwater



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For more information contact:

# Mrev the Storm



## What is stormwater runoff?



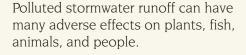
Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

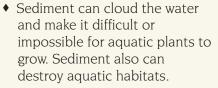
# Why is stormwater runoff a problem?

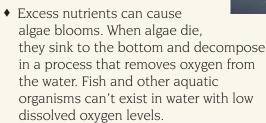


Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

## The effects of pollution







- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- Debris—plastic bags, six-pack rings, bottles, and cigarette butts-washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.



 Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.



# Stormwater Pollution Solutions

Septic

systems

Leaking and

maintained

systems release nutrients and

viruses) that can be picked up

by stormwater and discharged

Pathogens can cause public

◆ Inspect your system every

tank as necessary (every 3

3 years and pump your

household hazardous

waste in sinks or toilets.

pathogens (bacteria and

into nearby waterbodies.

environmental concerns.

health problems and

poorly

septic



Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

#### Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, vard clippings and

leaves can wash into storm drains and contribute

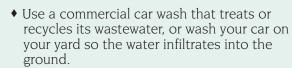
♦ Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.

nutrients and organic matter to streams.

- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- ♦ Compost or mulch yard waste. Don't leave it in the street or sweep it into
- Cover piles of dirt or mulch being

#### Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.



• Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

a major source of bacteria and excess nutrients in local waters.

♦ When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

### Pet waste

Pet waste can be





DRAINS TO BAY

untreated into a local waterbody.

Residential landscaping

decreasing stormwater runoff.

Rain Barrels—You can

collect rainwater from

rooftops in mosquito-

proof containers. The

lawn or garden areas.

water can be used later on

Education is essential to changing people's behavior.

Signs and markers near storm drains warn residents

Permeable Pavement—Traditional concrete and

asphalt don't allow water to soak into the ground.

systems allow rain and snowmelt to soak through,

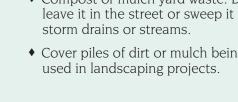
Instead these surfaces rely on storm drains to

divert unwanted water. Permeable pavement

that pollutants entering the drains will be carried

rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.



Commercia

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

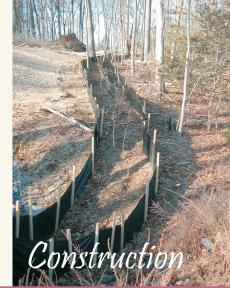
to 5 years).

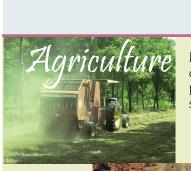
♦ Don't dispose of

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- ◆ Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

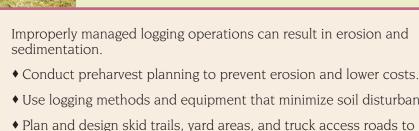
- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.



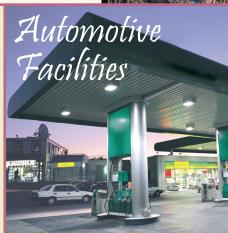


Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- ◆ Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.



- Use logging methods and equipment that minimize soil disturbance.
- ♦ Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- ◆ Construct stream crossings so that they minimize erosion and physical changes to streams.
- ◆ Expedite revegetation of cleared areas.



Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- ◆ Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

